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10/538,482

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Franck Fournel

(BIF023237 US)

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WRIGLEY & DREYFUS 28455
BRINKS HOFER GILSON & LIONE
P.O. BOX 10395
CHICAGO, IL 60610

EXAMINER

ULLAH, ELIAS

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MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/538,482	Applicant(s) FOURNEL ET AL.	
	Examiner ELIAS ULLAH	Art Unit 2892	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 August 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 26 and 27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/8/2005, 12/6/2006, 8/15/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election of claims 1-25 in the reply filed on 8/15/2008 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In base claim 1, the following subject matters are indefinite wherein the tangential stress state difference is selected to produce a predetermined stress state within the complex structure at the "moment of dissociation" thus the Examiner would interpret after curved both substrates mechanical force is dissociated ("dissociation") would read on the claimed limitation.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

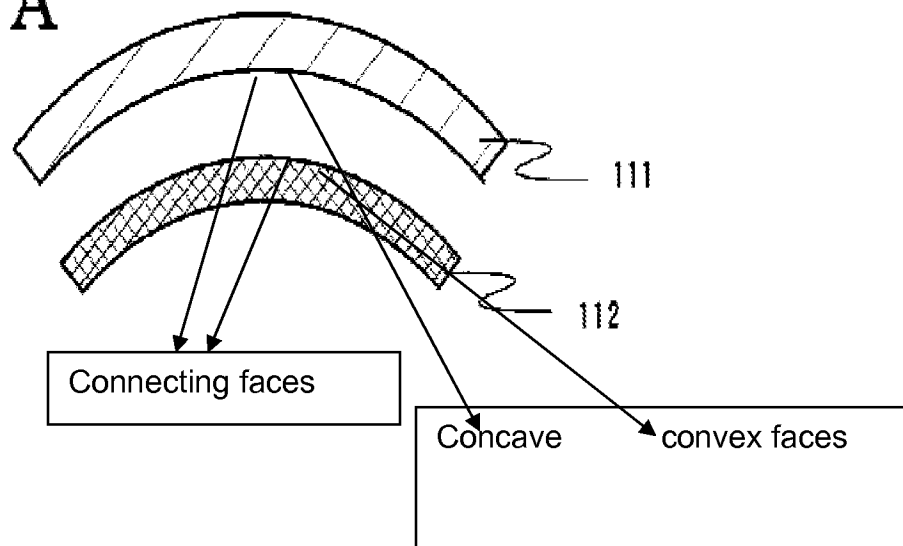
(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section

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351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-10, 12-15, 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamazaki et al. (Yamazaki, US 2003/0134488).

With regard to claim 1, Yamazaki shows a method of producing a complex structure (Fig. 1E), the structure being adapted to be dissociated in a separation region, the method by comprising assembling two substrates (111 and 112) at respective connecting faces thereof (see attached Fig. 1A, labeling) wherein prior to assembly, a tangential stress state difference is created between the two connecting faces by applying mechanical forces curve to curve each of the two substrates (Fig. 2A-2B and [0041] wherein the tangential stress state difference is selected to produce a predetermined stress state (tangential stress created after a mechanical force is applied see [0041]) force within the complex structure at the moment of dissociation (mechanical forces is dissociated see Fig. 1).

FIG. 1A

With regard to claim 2, Yamazaki shows the tangential stress state difference between the connecting face [0041] is selected to minimize the stress in the separation region at the moment of dissociation (see claim 1 discussion).

With regard to claim 3, Yamazaki shows curving the two substrates 111, 112 comprising curving so that the comprise respectively concave and convex face (see attached Fig 1, labeling)

With regard to claim 4, Yamazaki shows curving the two substrate 111, 112 comprises curving so that the connecting face comprises complementary faces (Fig. 1A).

With regard to claim 5, Yamazaki shows curving the two substrates 111, 112 comprises curving (Fig. 1A) so that the connecting faces (see attached Fig. 1A) comprise respectively spherical concave and spherical convex faces (Fig. 1A).

With regard to claim 6, Yamazaki shows applying mechanical forces comprises creating a pressure [0041] difference between the connecting faces (Attached Fig. 1A).

With regard to claim 7, Yamazaki shows creating a pressure difference between the connecting faces (Attached Fig. 1) comprises aspirating one of the two substrate onto a concave perform (Fig. 2A) having a suitable profile and imparting the profile to a face of the one substrate and wherein the one substrate rests on the concave perform at its periphery (Fig. 2B).

With regard to claim 8, Yamazaki shows creating a pressure difference between the connecting faces (see attached Fig. 1A) comprises aspirating one of two substrates

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111, 112 onto a concave perform having a suitable profile the one substrate and wherein the one substrate on the concave perform at its periphery (Fig. 2A-2B).

With regard to claims 9-10, Yamazaki shows applying mechanical force [0041] comprises deforming one of the two substrate 110, 112 between complementary first and second performs 211b, one of which is concave (performs is concave shaped) and the other 211a of which is convex and imparting [0045] selected profiles to the connecting face (see attached Fig. 1A).

With regard to claim 12, Yamazaki shows applying mechanical forces comprises applying mechanical forces simultaneously to the two substrates (Fig. 2B , wherein both substrates imparted before curving see also [0045]) by deforming the substrates between two performs having selected profiles to be imparted to the connecting faces (see attached Fig. 1A).

With regard to claims 13-14, Yamazaki shows applying mechanical forces comprises applying mechanical forces to at least one of the substrate 111, 112 by means of a perform comprising a mold [0041-0042] the preformed comprises a porous mold [0041, wherein male and female mold is porous mold].

With regard to claim 15, Yamazaki shows applying mechanical force comprises applying mechanical forces [0041] to two substrates 111,112 (wherein apply pressure on to the substrate to make curve by preformed see [0041, 0044-0045] using at least one deformable preform 211a.

With regard to claim 22, Yamazaki shows the two substrates (111, 112) are assembled by means of a flow layer 121.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 11, 18, 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki et al. (Yamazaki, US 2003/0134488).

8. With regard to claim 11, Yamazaki teaches the second perform 211b includes aspiration channels for keeping the one substrate curved (see Fig. 1A, wherein substrate been process by perform 211b and 211a the both substrates remains curved) within the first perform 211a has been removed

With regard to claim 18, Yamazaki teaches the two substrates (110, 112) are assembled by direct contact (Fig. 1E), but fails to teach specifically bonding will prevent air from being trapped between the connecting faces. However, it is obvious the

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bonding process disclose by Yamazaki in [0044] by adhesive also prevent air from being trapped between the connecting faces.

With regard to claims 23-25, Yamazaki teaches the two substrates are assembled (Fig. 1E), and preformed (Fig. 2A-2B) but fails to teach specific temperature range. However, it would have been obvious to one of ordinary skill in art to use teaching Yamazaki in the range as claimed, because it has been held that where the general conditions of the claims are discloses in the prior art, it is not inventive to discover the optimum or workable range by routine experimentation. MPEP 2144.05

9. Claims 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki et al. (Yamazaki, US 2003/0134488) in view of Gaud et al. (Gaud, 6,256,864).

With regard to claim 16, Yamazaki teaches assembling the two substrates 111, 112 comprises adhesive bonding [0048], but fails to molecular bonding between two substrates.

Gaud teaches a molecular bonding between two substrates (col. 5, lines 30-36). At the time the invention was made; it would have been obvious to a person having ordinary skill in the art to use molecular bonding teaching of Gaud in the method of complex structure of Yamazaki, because it is typical process in the prior art the bonding comprises molecular bonding or adhesive bonding and etc. as taught by Gaud in (col. 5, lines 30-36).

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10. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki et al. (Yamazaki, US 2003/0134488) in view of Liu et al. (Liu, US 2008/0017306).

With regard to claim 17, Yamazaki teaches a bonding process [0044], but fails to teach treating the connecting face to facilitate bonding.

However, Liu teaches treating a connecting face in the bonding process [0101]. At the time the invention was made; it would have been obvious to a person having ordinary skill in the art to treat bonding faces of substrate teaching of Liu in the method of complex structure of Yamazaki, because a treating process prior to bonding help to create leak free bonding between two substrates as taught by Liu in [0101].

11. Claims 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki et al. (Yamazaki, US 2003/0134488) in view of Gang (US 2002/0048949).

With regard to claims 19-21, Yamazaki teaches bonding between two substrates, but fails to teach piercing at least one of the two substrates comprises piercing the substrate its center and at the edge.

However, Gang teaches piercing 156 (Fig. 14) at least one of the two substrates comprises piercing the substrate its center and at the edge (Fig. 14). At the time the invention was made; it would have been obvious to a person having ordinary skill in the art to piercing the substrates teaching of Gang in the method of complex structure of Yamazaki, because by piercing the substrate helps to interconnect between tow substrates or chips as taught by Gang in [0008].

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELIAS ULLAH whose telephone number is (571)272-1415. The examiner can normally be reached on weekdays, between 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thao Le can be reached on (571) 272-1708. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Elias Ullah/
Examiner, Art Unit 2892

/Thao X Le/
Supervisory Patent Examiner, Art
Unit 2892